



INCORPORATED BY ROYAL CHARTER 1955

1971 ANNUAL CONFERENCE

NEW ZEALAND

AUCKLAND — March 1st-4th

WELLINGTON — March 4th-6th

DUNEDIN — March 6th-9th

PROGRAMME and REGISTRATION

THE AUSTRALASIAN INSTITUTE OF MINING AND METALLURGY

Telephone: 347 3166
Telegrams: Ausimamet, Melbourne

Clunies Ross House,
191 Royal Parade,
Parkville, Vic., Aust. 3052



1971 ANNUAL CONFERENCE

INVITATION

As announced in The Institute Bulletin, the 1971 Annual Conference of The Aus.I.M.M. will be held in New Zealand commencing with a Pre-Conference Social Function in Auckland on Sunday, February 28th, transferring to Wellington on Thursday, March 4th, to Dunedin on Saturday, March 6th, concluding at Dunedin on Tuesday, March 9th.

The 1971 President of The Institute, Professor E. A. Rudd, and the Chairman of the New Zealand Branch, Dr. John Rogers, extend a cordial invitation to members, ladies and visitors to participate.

GENERAL PROGRAMME

AUCKLAND

Saturday, February 27
9.00 a.m.-5.00 p.m.

Conference Enquiry Office — Inter-Continental Hotel, Cnr. Princes Street and Waterloo Quadrant, Auckland (Telephone — 74 770).
Conference Enquiry Office opens for collection of badges, etc.

Pre-Conference Tour — Rotorua (Limited — 120) — \$21.

A visit to the Te Aroha Racing Club is included in this tour.

Conference Enquiry Office opens for collection of badges, etc.

Harbour Cruise.

Monday, March 1

6.00 p.m.-10.00 p.m.

10.00 a.m.

Morning

Keynote Address: (Speaker to be announced.)

Minerals for Agriculture Symposium.

"Mining and Handling of Nauru Phosphate Rock", by Nauru Phosphate Corporation.

"Acidulation of Christmas 'A' Phosphate", by N.Z. Fertiliser Manufacturers' Research Association (Inc.).

"Development of Wash/Screen Process to Beneficiate Christmas Island 'B' Grade Phosphates", by J. S. Hoare.

OR

Technical Sessions.

"Nickel-Iron Exchange in Pyrrhotite", by W. E. Ewers.

"Vertical Zoning of Gold-Silver-Tellurides in the Emperor Gold Mine, Fiji", by D. L. Forsythe.

"The Exploration and Proposed Development of the Taharoa Iron Sand Deposit", by D. R. Buist.

Lunch at Hotels.

Afternoon

Minerals for Agriculture Symposium:

"The Aluminium-Iron Phosphate Overburden of Christmas Island—its Mineralogy, Mineral Chemistry and Thermal Transformations", by N. A. Trueman.

"Production of Water Soluble Phosphate Fertiliser from Christmas Island 'C' Grade Phosphate", by R. J. Allen.

"Production of Fertilisers and Smelter-Grade Alumina by Alkali Leaching of Christmas Island 'B' and 'C' Phosphate Ores", by Dr. H. P. Rothbaum.

OR

Technical Sessions:

"Biogeochemical Prospecting in New Zealand", by M. H. Timperley.

"Some Experience with Geochemical Prospecting in New Zealand", by P. Riley and J. C. Braithwaite.

"A Hydrometallurgical Scheme for New Zealand Sulphide Ores", by G. J. Tegg and E. G. Kelly.

Afternoon Tea.

Minerals for Agriculture Symposium:

"Discovery, Exploration and Feasibility Studies of the Development of Phosphate Deposits in Queensland", Broken Hill South Ltd.

"Assessment of Chatham Rise Phosphorite", Dept. of Mineral Technology, University of Otago and N.Z. Fertiliser Manufacturers' Research Association (Inc.).

"The Lake Rotokaua Sulphur Deposit", by G. B. O'Malley.

OR

Technical Sessions:
 "Kinetics of Impurity Removal from Steel for a Batch Process", by R. D. Andrew
 and G. A. Wright.
 "Steel Melting."

Business Session — Town Hall.
 Chairman: Professor E. A. Rudd. Guest Speaker (to be announced).
 Technical Visits (as set out on page 18).
 Free.

Tuesday, March 2
 All day
 Evening
Wednesday, March 3
 Morning

Keynote Address: (Speaker to be announced.)
 Morning Tea.
Technical Sessions:
 "The Condensation of Aluminium Chloride Vapour in a Stirred-bed
 Condenser", by F. R. A. Jorgensen.
 "The Design and Evaluation of Acid Pickling Inhibitors", by T. C. Lukeman.
 Lunch at Hotels.
Australian Mineral Industries Research Association Limited meeting:
 President: Sir Maurice Mawby, C.B.E.
 Afternoon Tea.

6.30 p.m. - 8.00 p.m.

Keynote Address: (Speaker to be announced.)
Buffet Dinner at the Inter-Continental Hotel.
 (By invitation to registered delegates and ladies.)

WELLINGTON
Thursday, March 4
9.00 a.m.

Afternoon

8.00 p.m.

Friday, March 5
Morning

Conference Enquiry Office — Town Hall.

Enquiry Office opens.

Delegates arrive in Wellington.

Visits to D.S.I.R. Divisions.

Golf and Sightseeing Tours.

Dinner at Hotels.

Social Function: Wellington Club, The Terrace.
(By invitation to registered delegates and ladies.)

Technical Sessions:

Concert Chamber, Town Hall, Wellington.

“A feasibility study for a Ferro-silicon industry in Southland”, by J. M. Hope.

“Scheelite exploration and development at Glenorchy”, by D. H. Bell and C. A. Blance.

“The Exploration for, and the Economic Appraisal of, Asbestos”, by B. C. Butt.

Technical Sessions:

Meeting Room — Wellington Library.

“A Study of Results of the VLF-EM Method of Prospecting in Australia and Papua”, by W. J. Langron.

“Ground Evaluation of Airborne Spectrometer Data in the Rum Jungle Area, Northern Territory”, by W. J. Langron and R. D. Beattie.

“Aerial Infra-Red Photography as a Guide to Mineralization”, by Dr. R. R. Brooks.

Morning Tea

Keynote Address (Speaker to be announced): Concert Chamber, Town Hall.

Lunch — Green Room, Town Hall.

Keynote Address (Speaker to be announced): Concert Chamber, Town Hall.

Afternoon Tea.

Financial Forum:

"Taxation of Mining Companies", by P. J. Rowe, LL.M., J.D. (Chicago),
Stone, Kurta & Co., Wellington.
"Exchange and Currency Controls and Regulations", by R. W. R. White,
A.C.A., A.C.I.S., Deputy Governor, Reserve Bank of New Zealand, Wellington.
"Availability of Finance", by H. J. Radford, B.Com., F.C.A., Daysh Renouf
& Co., Wellington.

OR

Technical Sessions:

"Electromagnetic Testing of Mine Winding Ropes — The Field Pattern on an
Internal Broken Wire", by Dr. H. E. J. Symes.
"Dynamic Shocks in Mine Hoisting Systems", by Professor J. P. Morgan.

Official Dinner.

By Invitation to registered senior delegates and ladies, attended by the Rt. Hon.
The Prime Minister of New Zealand, to be held at the Horticultural Hall and
Town Hall, Lower Hutt.

Afternoon

7.30 p.m.

Saturday, March 6

Delegates travel to Dunedin.

The Wellington Racing Club meeting at the Trentham Race Course.

DUNEDIN

Conference, Enquiry Office — University of Otago, Department of Mineral Technology.

Saturday, March 6
9.00 a.m.

Enquiry Office opens.

Delegates arrive Dunedin and confirm registrations.

Afternoon

Local Scenic Tours:

Short coach tours of Dunedin and environs covering city and University areas and hill suburbs.

University of Otago — Open.

Late Afternoon

University of Otago Official Reception — University Lodge or Union (by invitation only).

8.30 p.m.

Social Function with entertainment at Glenfalloch Lodge and Gardens.

Tour Da	9.00 a.m.-4.30 p.m.	Geological and historical tour to Hyde alluvial and Macraes Flat gold-scheelite areas — including lunch.
Tour Db	10.00 a.m.-4.00 p.m.	Historical, geological and economic features of the Otago schists in the Hyde and Macraes Flat areas will be covered. Visits will be made to alluvial areas near Hyde township where gold-bearing deep leads were once worked, and to abandoned gold-scheelite underground workings in the Macraes area. This tour covers some of the scenic areas of Central Otago.
Tour Dc	2.00 p.m.-5.00 p.m.	Barbecue at Long Beach. Visit to Long Beach via harbour side and Port Chalmers; extensive sand beach, ocean swimming and walks. Barbecue lunch and refreshments will be served.
Tour De	Evening	Scenic Tour of Otago Peninsula — including afternoon tea. A round trip bus tour of Otago Peninsula via the summit road and the harbour drive with panoramic views of ocean and harbour. The tour will include a visit to the Otago University Marine Biological Research laboratories with possible sightings of penguins, albatrosses and seals.
Monday, March 8	Morning	Otago Museum: Keynote Address: (Speaker to be announced.) Morning Tea.
		Technical Sessions: Otago Museum —
		Auditorium A:
		"The Role of Paleogeography in the Location of Marine Placers", by R. J. Anderson.
		"The Application- of BRGM's Alluvial Prospecting Practice in Australia", by M. J. Lawrence.

Afternoon

Auditorium B:

“Cemented Fill Practice and Research at Mt. Isa”, by Dr. E. G. Thomas.

“Grade Control Procedures in a Large Iron Ore Open Pit”, by (Hamersley Iron Pty. Ltd.).

Buffet Lunch at University Union (\$2.50 per person, reservation to be made in N.Z.).

Technical Sessions:

Auditorium A:

“The Development of a Simple Mathematical Model for the Agglomeration of Waikato North-Head Iron Sand”, by H. Rimmer and P. Wai.

“Electrochemical Processes in Flotation”, by Dr. R. Woods.

Auditorium B:

“A Study of the McArthur Lead-Zinc-Silver Deposit”, by Dr. N. W. J. Croxford and Miss S. Jephcott.

Afternoon tea

Technical Sessions:

Auditorium A:

“Blending of Coals for Coking”, by G. E. Edwards.

“A Detailed Assessment of Concentrator Performance at Broken Hill South Limited”, by A. Cameron, D. F. Kelsall, G. J. Restarick and P. S. B. Stewart.

Auditorium B:

“The Mechanization and Development of the New South Wales Coal Industry Over the last Twenty Years”, by T. M. Clark.

“Water Supply at the Warrego Mine”, by E. Davies and G. Ride.

Evening

Otago School of Mines Centennial and Final Conference Dinner — University Union.

Guest Speaker: Sir Henry Somerset, C.B.E.

(By invitation to registered delegates and ladies.)

LADIES' PROGRAMME

Conference Enquiry Office — Inter-Continental Hotel, Cnr. Princes Street and Waterloo Quadrant, Auckland (Telephone — 74 770).

Conference Enquiry Office opens for collection of badges, etc.

Pre-Conference Tour — Rotorua (Limited — 120) — \$21.

A visit to the Te Aroha Racing Club is included in this tour.

Conference Enquiry Office opens for collection of badges, etc.

Harbour Cruise.

Inter-Continental Hotel — Ballroom.

Official opening by His Excellency the Governor-General, Sir Arthur Porritt, Bt., G.C.M.G., K.C.V.O., C.B.E.

Morning Tea.

Tour of Auckland.

The tour will include some of Auckland's volcanic cones, fine viewpoints, once strongly fortified by the Maoris, but now set in beautiful parks. Lunch will be served at Waipuna Lodge, and the tour will return through seaside Howick, settled in 1847 by the Royal N.Z. Fencibles, a pensioners' corps raised in England by Sir George Grey to man the outer defences of Auckland during the Maori Wars.

Business Session — Town Hall.

Chairman: Professor E. A. Rudd.

Guest Speaker: (To be announced.)

AUCKLAND

Saturday, February 27

9.00 a.m.- 5.00 p.m.

Sunday, February 28

10.00 a.m.- 5.30 p.m.

6.00 p.m.-10.00 p.m.

Monday, March 1

10.00 a.m.

11.00 a.m.- 3.30 p.m.

8.30 p.m.

Tuesday, March 2

10.00 a.m.- 2.00 p.m.

Harbour Cruise on the "Ngaroma".

Cruise on the Waitemata Harbour ("sparkling waters") and the sheltered waters of the Hauraki Gulf. Points of interest will be the Harbour Bridge and some of the islands of the Gulf, especially Auckland's landmark, Rangitoto, an island volcano. Buffet lunch served on board.

6.00 p.m.- 7.30 p.m.

Wine and Cheese Function — Professional Club.

Wednesday, March 3

10.00 a.m.-12.00 p.m.

Tour of the University (10.00 a.m.) and the Art Gallery (11.00 a.m.).

Both are within walking distance of the Inter-Continental Hotel.

The University of Auckland is one of six in New Zealand, with more than 9,000 students. The grounds of the University and of the old Government House adjoining are attractively laid out.

The City Art Gallery was the first to be opened in New Zealand, and the Public Library, of which the nucleus was Sir George Grey's famous collection, presented in 1861, shared the building. A large new City Public Library is now nearing completion and the Art Gallery is undergoing extensive alteration and enlargement.

2.00 p.m.- 3.30 p.m.

Tour of the Museum.

The War Memorial Museum (1929) is on a superb site in the Domain (another old volcanic cone) overlooking the Harbour. There are noted collections of Maori material and carvings and of Asian Ceramics. A "Centennial Street" shows Auckland shops of earlier days. Museum publications and souvenirs may be purchased. There is also a coffee lounge.

6.30 p.m.- 8.00 p.m.

Buffet Dinner at the Inter-Continental Hotel.
(By invitation to registered delegates and ladies.)

WELLINGTON
Thursday, March 4
9.00 a.m.

Afternoon
8.00 p.m.

Friday, March 5
9.00 a.m.

10.00-12.30 p.m.

Conference Enquiry Office — Town Hall.
Enquiry Office opens.
Delegates arrive in Wellington.
Golf if required.
Social Function — Wellington Club, The Terrace.
(By invitation to registered delegates and ladies.)
Golf if required.

Wellington City and Marine Drive Tour.

A guided tour through Parliament Grounds, the main thoroughfares of Wellington City, the Civic Centre, Oriental Bay, Mt. Victoria, Evans Bay, Point Halswell, Worser Bay, Seatoun, Pass of Brands, Breaker Bay, Lyall Bay, Island Bay, Ohio Bay, Happy Valley, Brooklyn and the Terrace.

Paekakariki Tour.

Via new motorway, Petone, Lower Hutt, over Haywards Hill and through Paatahānuī (historic rural area destined for development into a self-supporting city within a few years), through farming country and native bush to the top of Paekakariki Hill. Return to Wellington is via coastal highway Plimmerton (seaside suburb), Portua City Shopping Centre, Portua East (extensive State Housing area), Tawa, Glenside, and Khandallah — breathtaking views of Wellington and harbour from the hillside suburb of Cashmere.

Or alternatively

A visit to the Dominion Museum, Art Gallery, and the Turnbull Library.

2.30-4.30 p.m.
7.30 p.m.

Formal Dinner by invitation to registered senior delegates and ladies, attended by the Rt. Hon. The Prime Minister of New Zealand, to be held at the Horticultural Hall and Town Hall, Lower Hutt.

DUNEDIN

Conference Enquiry Office — University of Otago, Department of Mineral Technology.

Saturday, March 6

9.00 a.m.

Enquiry Office opens.

Delegates travel to Dunedin.

Afternoon

Local Scenic Tours — Short coach tours of Dunedin and environs covering city and University areas and hill suburbs.
University of Otago — open.

5.00 p.m.

University of Otago Reception (by invitation only).

8.30 p.m.

Informal Social Function with entertainment at Glenfalloch Lodge and Gardens.

Sunday, March 7

Sightseeing tours, etc. (see General Programme).

Evening

Private hospitality for wives of Otago School of Mines Graduates attending Centennial Social Function.

Monday, March 8

Otago Museum.

Tour A
10.30 a.m.-11.30 a.m.

Guided tour of "Olveston". A private Jacobean style home with a world-wide collection of art treasures and antique furniture. Designed by the famous British architect, Sir Ernest George, and built in 1904, "Olveston" was recently bequeathed to the City of Dunedin.

Buffet Luncheon at the Otago Golf Club, Balmacewan.

Guided tour of "Olveston",

or

Tour C
2.00 p.m.- 3.45 p.m.

A visit to the School of Home Science, University of Otago. The Faculty of Home Science is the only educational institution in Australasia offering degrees and diplomas in Home Science and Nutrition. Visitors will be taken on a conducted tour of the departments of Design, Textiles, Clothing, Nutrition and Foods.

Tour D
2.00 p.m.- 5.00 p.m.

A guided tour of the Taieri plains with visits to historical buildings, homes and gardens, including afternoon tea.
(In indicating choice of Tours "B", "C", "D" on the afternoon of March 8, first, second and third preferences should be stated.)

Evening

Otago School of Mines Centennial and Final Conference Dinner—University Union.

Guest Speaker: Sir Henry Somerset, C.B.E.
(By invitation to registered delegates and ladies.)

POST-CONFERENCE TOURS

Conference concludes, Delegates commence post-Conference tours.

Arrangements should be made with the New Zealand Government Tourist Bureau offices in Melbourne, Sydney and Brisbane as soon as possible as March is a peak tourist month for resorts such as Mt. Cook, Queenstown, Milford Sound and Manapouri.

Tourist Bureau office addresses are:—

Melbourne CML Building, 93-95 Elizabeth Street,
Melbourne, Vic. 3000.

Sydney 14 Martin Place,
Sydney, N.S.W. 2000.

Brisbane MLC Building, Adelaide Street,
Brisbane, Qld. 4000.

TRANSPORT – AIR

Ansett Airlines of Australia have agreed to assist delegates who wish to make air bookings. Delegates wishing to take advantage of this arrangement should fill in the enclosed form and return to Head Office of The Institute. All ticketing must be confirmed before end of January.

ACCOMMODATION

Block bookings have been made by The Institute in New Zealand hotels and motels. The rates vary from \$5.00 to \$14.00 (room only). Visiting delegates and ladies are required to pay a deposit of \$10.00 per person for each centre (Auckland, Wellington, Dunedin) accompanying the Registration Fee and Cover Charges and to pay the balance directly to the hotels.

TECHNICAL VISITS

Technical visits for male senior delegates and students will be made as shown in the Questionnaire and described in the Appendix. Costs, including transport, payable together with the Registration Fee.

LADIES' PROGRAMME

Visits by ladies will be made as listed in the Questionnaire and described in the Programme. Please indicate which of the visits you will participate in and forward costs together with Registration Fee.

REGISTRATION

It is necessary for all members, non-members and ladies who propose to participate to register formally, by completing the Registration Form and forwarding to Head Office of The Institute not later than **January 15, 1971**, accompanied by remittance to cover registration fees, cover charges, costs of technical visits and accommodation deposit.

Registration Fees are as follows:—

(a) Visiting Delegates —							
Institute members	..	..	..	..	..	..	\$30.00
Non-members	..	..	..	..	..	..	\$40.00
Ladies	..	..	..	..	..	..	\$15.00
Students	..	..	..	..	..	..	\$10.00
(b) New Zealand Delegates —							
Institute members	..	..	..	..	..	..	\$30.00
Non-members	..	..	..	..	..	..	\$40.00
Ladies	..	..	..	..	..	..	\$10.00
Students	..	..	..	..	..	..	\$10.00

COVER CHARGES

Includes all costs of social functions —

- (a) Auckland —
Visiting Senior Delegates and Ladies \$18.00 per person
Residents as arranged*.
- (b) Wellington —
Visiting Senior Delegates and Ladies \$22.00 per person
Residents as arranged*.
- (c) Dunedin —
Visiting Senior Delegates and Ladies \$12.00 per person
Residents as arranged*.

* Charges for individual functions will be paid to local committees.

Students — Visiting and Local.

Cover charges will be advised at a later date for Students.

APPENDIX—DETAILS OF VISITS

Pre-Conference Tour — Rotorua (Limit — 120) —
Departs Auckland Saturday, February 27, returning Sunday, February 28. A visit to the Te Aroha Racing Club is included in this tour.
Cost: \$21.

TOUR A

Pacific Steel Limited —
Inspection of Kochs Rod Mill.
New Zealand Steel Limited —

Main Plant (Ladies are not allowed to visit the Main Plant) —
Inspection of iron sand blending, pelletising, Lurgi kiln, electric arc furnaces and Con-cast machine. Inspection of galvanising plant.
Mine Site —

Inspection of concentration plant. Bus trip to mining area, and through adjacent forestry to coastal look-out. Demonstration of forestry techniques by Forest Service.
The tour of these two companies will be of approximately 8 hours duration.
Cost: \$6.00.

TOUR B

Auckland Volcanoes (Morning tour) —

This tour provides excellent views of Auckland as well as examples of craters, tuff rings, scoria cones, fire pits, a buried forest and a large quarry (Winstones Limited).
Duration of this tour is approximately 3½ hours. Cost: \$1.00.

TOUR C

Auckland Volcanoes and Crown Lynn Potteries —

This tour will cover the same ground as Tour B plus a visit to Crown Lynn Potteries after lunch, where a variety of clay processing operations will be seen.
The duration of these two visits will be approximately 7 hours. Cost: \$3.50.

TOUR D Coromandel Geology and Mining —

This tour is primarily of geological interest in particular, Coromandel type rocks and hydrothermal alteration, with visits to the Tui lead-zinc mine of Norpac Mining Limited near Te Aroha and the silver mine of the Consolidated Silver Mining Company at Maratoto.

The duration of this tour will be approximately 10 hours. Cost: \$7.00.

TOUR E 3-Day Tour of Tui Mine — Rotorua — Taupo — Wellington — (Arrival in Wellington, 5 p.m., Thursday, 4th March.)

Inclusive Cost: \$50.00 (Lakeside Hotel, Taupo), \$55.00 (Wairakei Hotel).

Tuesday, March 2nd:

Travel south from Auckland calling at the Tui lead-zinc mine and mill of Norpac Mining Limited and then to Rotorua either via Owahoro ignimbrite quarry, Waihi, Tauranga or via the Mamaku Plateau. Visit Whakarewarewa thermal area and Maori Arts Centre. About 200 miles. Stay overnight at the Caravelle Motel, Rotorua.

Wednesday, March 3rd:

Travel from Rotorua to Wairakei via the geothermal areas of Broadlands (sulphide mineralisation) and the Wairakei geothermal power area. Visit Aratiatia on the Waikato River, Lake Rotokaua sulphur, Kaiapo Bay faulting. Stay overnight at the Wairakei Hotel or the Lakeside Hotel, Taupo. About 100 miles.

Thursday, March 4th:

Travel to Wellington (about 250 miles) round Lake Taupo via Turangi hydro-construction and Desert Road past volcanoes — Mt. Ruapehu, Ngaruhoe and Tongariro. Arrive Wellington at 5 p.m.

Incoming mail should be addressed to the delegate at the following information centres for re-distribution —

Auckland

Name.....
 The Australasian Institute of Mining and Metallurgy
 Annual Conference, 1971,
 C/- Inter-Continental Hotel (Telephone 74 770),
 Cnr. Waterloo Quadrant and Princes Street,
 AUCKLAND, NEW ZEALAND.

Wellington

C/- Wilberfoss & Company (Telephone 70 566),
 Aurora House, Mayfair Centre,
 48-64 The Terrace,
 WELLINGTON 1, NEW ZEALAND.

Dunedin

C/- Associate Professor M. H. Buckenham (Telephone 79 561),
 Department of Mineral Technology,
 University of Otago,
 DUNEDIN, NEW ZEALAND.

Outgoing mail will be through the normal postal channels by the delegates themselves.

B. E. JACKA,
 Secretary.

N.B.: Included with the circular is Registration Form and Air Reservation Form. The closing date for registration is January 15, 1971.



